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10/517,930	08/18/2005	Susan Michelle Kutay	J3671(C)	6883

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EXAMINER	
CERNOCH, STEVEN MICHAEL	
ART UNIT	PAPER NUMBER
3752	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/517,930	KUTAY ET AL.	
	Examiner	Art Unit	
	STEVEN CERNOCH	4114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In response to the Amendment filed on January 10, 2008, claims 1-14 and the newly added claims 15-18 are pending.

Claim Objections

2. Claims 3, 5 and 6 objected to because of the following informalities:

The terms "a resistivity of less than 104 ohm.cm" (regarding claim 3) and "any of claims 2 to 4claim 2" (regarding claim 5 and 6) should be respectively recited as --a resistivity of less than 10^4 ohm.cm-- and --any one of claims 2 to 4--, so as to correct the typographic error. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 2, 5, 8, 9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904 B1) in view of Borod et al. (US Pat No 5,335,855) and Gordon et al. (US Pub No 2002/0065479 A1) further in view of Herb et al. (US Pat No 6,179,586 B1) and furthermore in view of Kohlmann et al. (US Pat No 5,333,660).

Regarding claim 1, Ulczynski et al. discloses the hand-held domestic spraying product (Fig. 1, #10) comprising a reservoir (Abstract, line 2) holding a liquid composition (line 4), a nozzle means (line 3) for producing a spray from said liquid composition, a liquid transfer conduit for transfer of the liquid composition from the reservoir towards the nozzle means (Fig. 3, 16), a transfer conduit valve in communication with the liquid transfer conduit (15), an electrically powered pump (line 1) and a control means (line 3), while Borod et al. teaches an air inlet valve (Fig. 1, 48), an air entry chamber (42), an air flow control valve (46), an air flow channel in communication with the reservoir (46), however Gordon et al. discloses the MEMS pump (paragraph 100), while Herb et al. teaches an array of pumps (column 3, line 50) and

Kohlmann et al. discloses a buffer chamber (column 7, line 32). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. with the MEMS pump of Gordon et al. because micro pumps are smaller and require less space, the air valves and chamber of Borod et al. to bring in the advantage of atmospheric pressure into play, the pump array of Herb et al. as it forfeits the need for lateral channels and will increase the pumping rate (column 5, lines 10-12) and the buffer chamber of Kohlmann et al. as it can greatly reduce maintenance needs (column 2, line 20).

Regarding claim 2, neither Ulczynski et al. or Gordon et al. disclose the air pump, however Borod et al. does disclose said air pump resulting in an air pressure modification, providing the force required to move the liquid composition (column 2, lines 36-39). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. with the air pump of Borod et al. because air pumps are known in the art.

With regards to claim 5, Gordon et al. discloses the MEMS pump but Borod et al. discloses the air compressor, increasing the air pressure adjacent to the liquid composition (column 3, lines 64-66). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. with the MEMS pump of Gordon et al. and the air pump of Borod et al. because micro air pumps are used for building up pressure (column 2, line 37).

Regarding claim 8, Gordon et al. teaches said MEMS pump however, Herb et al. discloses a parallel array (column 3, line 52).

In regards to claim 9, Gordon et al. teaches said MEMS pump however, Herb et al. discloses a series array (column 3, line 49-50).

Regarding claim 11, none of Ulczynski, Gordon or Borod et al. teach a buffer chamber, however Kohlmann et al. does disclose a buffer chamber for receiving the air from the MEMS pump (column 7, line 32).

In regards to claim 12, Kohlmann et al. teaches that the buffer chamber has a volume of at least half that of the reservoir containing the liquid composition (Fig. 8, #'s 113 and 114).

With regards to claim 13, Ulczynski et al. teaches said transfer conduit (Fig. 3A, #19).

In regards to claim 14, Ulczynski et al. discloses that the transfer conduit comprises one or more valves (Fig. 3A, #15).

6. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904 B1) in view of Borod et al. (US Pat No 5,335,855) and Gordon et al. (US Pub No 2002/0065479 A1) further in view of Herb et al. (US Pat No 6,179,586 B1) and Kohlmann et al. (US Pat No 5,333,660) and furthermore in view of Michalchik et al. (US Pat No 4,776,515).

Regarding claim 3, neither Ulczynski or Gordon et al. teach resistivity, however Michalchik discloses a liquid composition having a resistivity of less than 104 ohm.cm (Abstract, lines 7-9). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. and the resistivity of Michalchik et al. because a liquid resistivity

of greater value can carry a negative charge and even form explosive droplets (column 3, lines 47-48).

Regarding claim 4, Gordon et al. discloses the MEMS pump however Herb et al. teaches a diaphragm pump that is electrostatically driven (Abstract, lines 1-2). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. further in view of Borod et al. and furthermore in view of Michalchik et al. with the diaphragm pump of Herb et al. as having a reduced pump volume and weight for a given fluid pumping rate due to it's compact design (column 1, lines 7-8).

7. Claims 6, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904 B1) in view of Borod et al. (US Pat No 5,335,855) and Gordon et al. (US Pub No 2002/0065479 A1) further in view of Herb et al. (US Pat No 6,179,586 B1) furthermore in view of Kohlmann et al. (US Pat No 5,333,660) and finally in view of Lang et al. (US Pat No 6,131,212).

Regarding claim 6, Gordon et al. teaches the MEMS pump however Lang et al. discloses the air stream that serves to draw the liquid composition from the reservoir using a venturi effect (column 2, lines 16-19). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. in further view of Borod et al. with the venturi effect of Lang et al. as it increases the turbulent flow of the water (column 2, lines 33-36).

Regarding claim 15, Ulczynski et al. discloses the hand-held domestic spraying product (Fig. 1, #10) comprising a reservoir (Abstract, line 2) holding a liquid composition (line 4), a nozzle means (line 3) for producing a spray from said liquid composition, a liquid transfer conduit for transfer of the liquid composition from the reservoir towards the nozzle means (Fig. 3, 16), a transfer conduit valve in communication with the liquid transfer conduit (15), an electrically powered pump (line 1) and a control means (line 3), while Borod et al. teaches an air inlet valve (Fig. 1, 48), an air entry chamber (42), an air flow control valve (46), an air flow channel in communication with the reservoir (46), however Gordon et al. discloses the MEMS pump (paragraph 100), while Herb et al. teaches an array of pumps (column 3, line 50) and Kohlmann et al. discloses a buffer chamber (column 7, line 32) all while Lang et al. discloses the air stream that serves to draw the liquid composition from the reservoir using a venturi effect (column 2, lines 16-19).

Regarding claim 16, Gordon et al. teaches said MEMS pump however, Herb et al. discloses a parallel array (column 3, line 52).

In regards to claim 17, Gordon et al. teaches said MEMS pump however, Herb et al. discloses a series array (column 3, line 49-50).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904 B1) in view of Borod et al. (US Pat No 5,335,855) and Gordon et al. (US Pub No 2002/0065479 A1) further in view of Herb et al. (US Pat No 6,179,586 B1) furthermore in view of Kohlmann et al. (US Pat No 5,333,660) and finally in view of Talaski et al. (US Pat No 5,374,169).

With regards to claim 7, neither Ulczynski or Gordon et al. teach a pulse reduction means, however Talaski et al. does disclose said pulse reduction means (Abstract, line 1). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. with the pulse reduction means of Talaski et al. as it will reduce audible noise emanating from the pump (Abstract, lines 2-3).

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904 B1) in view of Borod et al. (US Pat No 5,335,855) and Gordon et al. (US Pub No 2002/0065479 A1) further in view of Herb et al. (US Pat No 6,179,586 B1) and furthermore in view of Kohlmann et al. (US Pat No 5,333,660)

Regarding claim 10, Gordon et al. teaches said MEMS pump while Herb et al. discloses a parallel array of pumps, however Peters et al. teaches non-synchronous pulse frequencies (paragraph 47, lines 9-13). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have motivation to combine the invention of Ulczynski et al. in view of Gordon et al. further in view of Herb et al. with the non-synchronous pulse frequencies of Peters et al. as it will prevent vibration of the actuators and audible noise during operation of the micropump (paragraph 47, lines 11-12).

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulczynski et al. (US Pat No 6,182,904 B1) in view of Borod et al. (US Pat No 5,335,855) and Gordon et al. (US Pub No 2002/0065479 A1) further in view of Herb et al. (US Pat No 6,179,586 B1) furthermore

in view of Kohlmann et al. (US Pat No 5,333,660) and Lang et al. (US Pat No 6,131,212) and finally in view of Peters et al. (US Pub No 2001/0014286 A1).

Regarding claim 18, Gordon et al. teaches said MEMS pump while Herb et al. discloses a parallel array of pumps, however Peters et al. teaches non-synchronous pulse frequencies (paragraph 47, lines 9-13).

Response to Amendment

11. Applicant's Amendment filed on January 24, 2008, regarding issues raised under § 112 have been deemed persuasive, therefore § 112 rejections have been removed. Moreover, Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN CERNOCH whose telephone number is (571)270-3540. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joe Cheng can be reached on (571)272-4433. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SMC
2/1/2008

/Joe H Cheng/
Supervisory Patent Examiner
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